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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/680,380	10/06/2003	Rolf Bruck	E-80046	5871

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EXAMINER	
BHAT, NINA	

ART UNIT	PAPER NUMBER
1764	

DATE MAILED: 12/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/680,380	BRUCK ET AL.	
	Examiner	Art Unit	
	N. Bhat	1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 September 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) *1-11 and 21-28* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *12-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-28* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's election without traverse of Group II, drawn to a metal foil, claims 12-20 in the reply filed on September 20, 2006 is acknowledged. Applicant has requested rejoinder as set forth in MPEP 821.04, the examiner will discuss rejoinder of some or all of the claims when the metal foil (product or article) is deemed allowable. At this point, it is premature to discuss rejoinder of claims as it is maintained by the examiner that the restriction requirement is proper and that the claims as set forth in the requirement are directed to separate and distinct inventions. The examiner acknowledges applicant's request for rejoinder.

2. Action on the merits of claims 12-20 follows:

3. Claim19 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear what applicant means by "microstructure" any metal disc or foil or article will have a microstructure as well as a macrostructure. It is unclear what is meant by "constructed with a microstructure". Applicant should recite what is meant by microstructure. Applicant should describe the ribs, or the waves or that the metal has been stamped with a pattern or that the metal has be etched or embossed with a pattern or that the metal includes grooves, etc. "Constructed with a microstructure" is meaningless in the context of a metal foil or a piece of metal, all metals, metal alloys, metals with ceramic coatings etc. will inherently have a microstructure. Suitable correction and/or explanation are required.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 12, 13 ,19 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Maus et al.[5,902,558]

Maus et al. teach a catalytic carrier body which includes a central channel and adjacent discs defining a multiplicity of curved outer channels bonded by the discs. The individual disks are curved differently form one another and have channels with a curvature that is the same and/or different. The disk includes a microstructure and microstructure, the configuration of the disk alternating with disks with a macrostructure

and disks with a microstructures providing turbulence in that area and therefore improves mass transfer and mixing. The exhaust gas flows advantageously such that the flow through the carrier body is from the inside outward and radially over the discs. [Note Column 2, lines 3-14] The disk (18) is specifically taught and shown in Figure 4 and 5 which depicts (10) which includes embossed features formed concentrically with the central region. The central region (17) acts an opening, which form s the central channel 5. Microstructures can be formed on one side or both sides of the disk.[Note Column 4, lines 33-41] It is maintained that Maus et al. specifically teach metal foil comprising a one piece body having an interior hold formed therein, an inner contour delimiting the hold, and outer contour and a structure with approximately radially running formations.

8. Claims 12-14, 6,19 and 20 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Haerle USP 5,215,724.

Haerle specifically teach providing a one-piece body or disc, which provides radial flow of waste gas through the discs either from the outside towards the inside or from the inside towards the outside. The disc includes ribs and beans which can be molded into the filter disc and can include a wavelike form and the crests and troughs of the waves form the spaces for the filter discs as depicted in Figures 1 and 2. From the figures, the filter disc (1) is a planar sheet of metal which can be molded or shaped to provide the waves and troughs and would constitute a one-piece, planar, body which includes a microstructure. The filter disc (1) includes a hole formed therein, includes an inner contour delimiting the hole, an outer contour and provides a structure with

approximately radially running formations. Note specifically from the figure the filter disc (1) and a free or open central interior space (4) forming a coaxial bore.[Note Column 3, lines 1-55. The waste gases flow radially through the filter discs from the outside towards the inside, the free of open interior space forms the waste gas outlet channels. When ribs (2) and beads (3) are arranged in the radial direction as shown in Figure 5, the ribs and beads are curved like guide blades in relation to the radial direction resulting in good flow characteristics in association with the tangential feed channel. The formations of the waves and troughs as described by Haerle include wave peaks and wave valleys are designed to alternate in a radial sequence between adjacent filter dices and around the central interior space or bore. The filter discs are designed as dishes with circular shape however as shown in Figure 6, an oval shape is possible, and Figure 7 shows two stacks of filter discs arranged along side one another in a filter housing, the filter discs are designed as irregular polygons, kidney-shaped or can be any other desired shape.[Note Column 3, lines 65 to Column 4, lines 1-8]. Haerle teach that the invention is directed to a filter body consisting of a plurality of individual filter discs arranged on top of one another. Haerle teach that catalytic material (12) can be included in one channel 9 as shown in Figure 4.

In the alternative Haerle, does not specifically recite applicant's metal foil or that he one piece body is seamless. Haerle as described above teaches a metal disc which is substantially planar and which appears to be seamless as shown in the figures and has been described in Columns 3 and 4, there is no expressed teaching of "seamless"

but it would be considered to be inherent in the metal filter disc as described and taught in the figure and the description of filter disc (1).

9. Claims 15, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haerle. Haerle teaches the invention substantially teaches providing teach metal foil or planar metal disc comprising a one piece body having an interior hole formed therein, an inner contour delimiting the hole and outer contour and a structure with approximately radially running formations. Haerle as taught above, teaches that the disc includes wave peaks and wave valleys but does not specifically teach that the wave height is constant in the radial direction and that the wave length increases in radial direction, to adjust the wave length and amplitude as claimed so that the wave length increases in a radial direction and provides radial flow would have been obvious from the teachings of Haerle who at least teaches that the that the ribs (2) and beads (3) as shown in Figures 1 and 5 are arranged in the radial direction and are curved like guide blades in relation to the radial direction resulting in very good flow characteristics in association with the tangential feed channel and therefore to adjust the wave length and amplitude (height) would have been obvious to one having ordinary skill in the art as the ordinary artisan from reading Haerle would recognize that flow characteristics would be improved by the specific arrangement of the ribs and beads and to provide a constant wave height and increasing the wave length radially would have been obvious to one having ordinary skill in the art. With respect to claims 18-19 regarding the foil thickness this would have been obvious to one having ordinary skill in the art as an obvious engineering design choice where the reference teaches to use a plurality of discs which

can be of any size or shape and used in a modular manner absent criticality in showing.[Note Column 1, lines 35-36]

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bode et al. teach a honeycomb body having microstructures in an intersecting configuration. Ragland teach flexible metal foil shields and methods of making. Kruse teach a metallic catalyst carrier body formed in hold body from a metal foil strips. Ragland'212 teach a flexible corrugated multilayer metal foil shield. Treiber (not prior art but of interest) teach a system having open particulate filter and heating element. Wieres (not prior art but of interest) teaches a method for the produced of converter honeycomb body made of a plurality of metal layers. Maus et al. 2005/0170957 (not prior art but of interest) teaches a metallic honeycomb body having at least partially perforated sheet metal layers.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to N. Bhat whose telephone number is 571-272-1397. The examiner can normally be reached on Monday-Friday, 9:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

N. Bhat
Primary Examiner
Art Unit 1764